

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 March 2005 (03.03.2005)

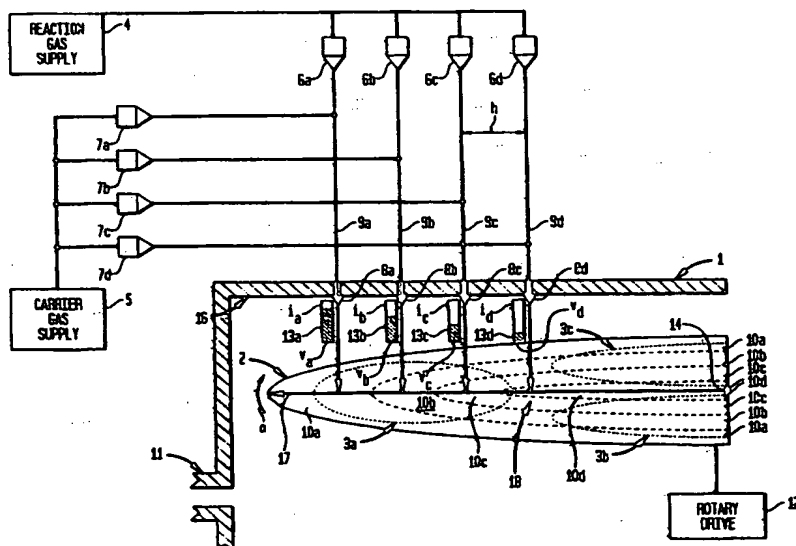
PCT

(10) International Publication Number
WO 2005/019496 A1

- (51) International Patent Classification⁷: C23C 16/00, 16/06, 16/455, C30B 25/02
- (21) International Application Number: PCT/US2003/026112
- (22) International Filing Date: 20 August 2003 (20.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): EM-CORE CORPORATION [US/US]; 145 Belmont Drive, Somerset, NJ 08873-1214 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MURPHY, Michael [US/US]; 9J 1 JFK Boulevard, Somerset, NJ 08873 (US). HOFFMAN, Richard [US/US]; 2 Mitchell Lane, Clinton, NJ 08809 (US). CRUEL, Jonathan [US/US]; 314 Commons Way, Somerset, NJ 08873 (US). KADINSKI, Lev [US/US]; 1068 Tullo Farm Road, Bridgewater, NJ 08807 (US). RAMER, Jeffrey, C. [US/US]; 8 Penny Lane, Flemington, NJ 08822 (US). ARMOUR, Eric [US/US]; 14 Laning Avenue, Pennington, NJ 08534 (US).
- (74) Agents: MILLET, Marcus, J. et al.; Lerner, David, Littenberg, Krumholz & Mentlik, LLP, 600 South Avenue West, Westfield, NJ 07090 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
— with amended claims

[Continued on next page]

(54) Title: ALKYL PUSH FLOW FOR VERTICAL FLOW ROTATING DISK REACTORS



(57) Abstract: In a rotating disk reactor (1) for growing epitaxial layers on substrate (3), gas directed toward the substrates at different radial distances from the axis of rotation of the disk has substantially the same velocity. The gas directed toward portions of the disk remote from the axis (10a) may include a higher concentration of a reactant gas (4) than the gas directed toward portions of the disk close to the axis (10d), so that portions of the substrate surfaces at different distances from the axis (14) receive substantially the same amount of reactant gas (4) per unit area. A desirable flow pattern is achieved within the reactor while permitting uniform deposition and growth of epitaxial layers on the substrate.

WO 2005/019496 A1

RECEIVED
MAR 7 - 2005
LDL&M